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JOURNAL OF

THE NEW ENGLAND BOTANICAL CLUB

Vol. 22. December, 1920. No. 264.

BRAINERD & PEITERSEN'S BLACKBERRIES OF NEW ENGLAND.[1]

M. L. Fernald.

During more than a decade Mr. W. H. Blanchard stirred American botanists as they had not before been aroused to the importance of closely studying the native blackberries, and set an example of marvelous devotion and self-sacrifice: in his declining years abandoning his remunerative pursuits and spending his meagre savings and complete energies in an attempt to throw light upon the hitherto hardly appreciated complexities of the American blackberries. In Blanchard's own words, "This search has continued and is now ten years old. I have searched throughout the whole of the eastern part of the United States and Canada as far west as blackberries are found, or from St. John's, Newfoundland, to Lake Winnipeg in Manitoba, and south to Florida . . . . . making the search as complete as my time and limited means would allow." As a result of his unprecedented activity twenty-two papers on the blackberries were published before impaired eyesight and age forced him to relinquish his keen and untiring studies of an amazingly difficult problem. Fortunately, however, before giving up active work he was able to summarize his conclusions in a very valuable paper[2] in which he recognized in northeastern America the following 16 as true species: *Rubus canadensis* L., *R. allegheniensis* Porter, *R. Andrewsianus* Blanchard, *R. hispidus* L., *R. procumbens* Muhl., *R. trivialis* Michx., *R. recurvans* Blanchard, *R. cuneifolius* Pursh, *R. frondosus* Bigelow, *R. setosus* Bigelow, *R. semisetosus* Blanchard, *R. vermont-*

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[1] Ezra Brainerd & A. K. Peiterseu. Blackberries of New England—their Classification. Vermont Agric. Expt. Sta. Bull. 217. June, 1920.

[2] Blanchard, Rubus of eastern North America. Bull. Torr. Bot. Cl. xxxviii. 425–439 (1911).

anus Blanchard, *R. amicalis* Blanchard, *R. glandicaulis* Blanchard, *R. multiformis* Blanchard and *R. recurvicaulis* Blanchard.

Following Blanchard's stimulating example, scores of active field-botanists, who had not previously appreciated the need of close observation and unlimited collections and notes, have been studiously watching and painstakingly collecting the blackberries—painstakingly, since the collection and preparation of hundreds or thousands of specimens of *Rubus* in a single season is a painful and monotonous task. As a result of this alert interest many New England botanists had long awaited the publication of the present paper by Brainerd & Peitersen, for they had learned to have profound regard for Brainerd's work on the genus *Viola*. Furthermore, some years prior to Blanchard's phenominal activity, Brainerd had published a synopsis[1] of the New England blackberries, in which he recognized 11 species, 1 variety and 1 hybrid; and subsequently he has been our most positive exponent of the theory that nearly all of our blackberries are hybrids. In the present paper, which is his latest statement on this question, 12 true species are recognized in New England and 46 plants are treated as hybrids, suspected hybrids or blend species and 5 as doubtful. And, although the "New England" of this paper is chiefly Vermont (reversing the early usage when Vermont declined to be a part of New England), various plants unknown outside New York or New Jersey are included, thus displaying the authors' present liberality of interpretation, especially toward the west and southwest.

The attempt to draw a definite line between the species and the hybrids and blend species has led to separate keys and treatments for these plants. This is unfortunate for the user, for no one, not specially forewarned or gifted with remarkable intuition, finding *Rubus frondisentis* ("*R. pergratus* × *setosus*") superabundant in Coos County, New Hampshire, *R. glandicaulis* ("*R. allegheniensis* × *setosus*") in the thickets of Prince Edward Island where *R. setosus* is unknown, or *R. arenicola* ("*R. Baileyanus* × *frondosus*") dominant on dry barrens of Nova Scotia where *R. Baileyanus* is unknown and where *R. frondosus* is represented only by *R. recurvans*, can guess in which key to trace his species.

As stated, *Rubus glandicaulis* (cited by the authors on p. 61 as if found at only 3 stations—1 each in Maine, New Hampshire and Vermont) occurs on Prince Edward Island where, during three seasons of conscientious observation and collecting of *Rubus* by such careful field-botanists as Blanchard, Bartram, Long, St. John and the present reviewer, no *R. setosus* (reputed parent of *R. glandicaulis*) has ever been found. Similarly, *R. arenicola* (cited on p. 75 as found at 3 stations—1 in Maine, 2 in eastern Massachusetts) is common in Nova Scotia (where long since collected and identified by Blanchard), but one of its supposed parents reaches its eastern limit in eastern Massachusetts (or possibly southern Maine), at least 200 miles across the Gulf of Maine from the nearest point of Nova Scotia. Again, *R. tardatus* (p. 83), treated as a hybrid of *R. flagellaris* (*R. procumbens*) and *R. setosus* and cited as if found only at Kennebunk, Maine, is a dominant shrub of boggy thickets and lake-margins on Prince Edward Island and Nova Scotia and it is characteristic of some bogs and peaty shores of central Cape Cod. Yet of its alleged parents, *R. flagellaris* (even in its most inclusive sense) is not known east of the Kennebec valley and *R. setosus* is quite unknown on much-explored Cape Cod. Is it not, then, somewhat strange, if these are no more than local and very recent hybrids, that they should abound over such wide areas and hundreds of miles away from one or both of their supposed parents?

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[1] Brainerd, The Blackberries of New England, RHODORA, ii. 23–29 (1900).

It is, in fact, very difficult to make out the principle by which the hybrids of Brainerd & Peitersen's treatment are differentiated from the true species. *R. elegantulus* (p. 37) with "Pollen about 70% imperfect" and a restricted range (the uplands of New Hampshire and Vermont), and *R. vermontanus* (p. 39) with "Pollen about 85% imperfect" and a distribution said to be confined to New Hampshire and Vermont, are treated as true species. But *R. frondisentis* (p. 63) of similar range and with "Pollen about 10% imperfect," a plant with seedlings which "are very uniform and seem to breed true to the type," and *R. abbrevians* (p. 65) again of similar range, and *R. permixtus* (p. 69), extending from New Hampshire to New York and New Jersey, the former with "Pollen about 10% imperfect" and seedlings which "vary very little from the mother plant," the latter with "Pollen about 50% imperfect" and seedlings which "do not revert to the parent types," are treated merely as hybrids. If these characteristic and easily recognized plants are indeed hybrids they are notable refutations of the much overworked theory, that hybrids have imperfect pollen and do not breed true.

A further refutation is found in the fact, that two of the universally recognized species, admitted without hesitation by the present authors and by every other competent systematist, have as poor pollen as is found in the genus. These are the "Thornless Blackberry," *R. canadensis* (p. 35), ranging from Newfoundland to Wisconsin and the mountains of North Carolina and Tennessee and the "Running Swamp Blackberry" (which often grows on dry sand plains), *R. hispidus* (p. 43), with an almost equally broad range, from Nova Scotia to southern Ontario, Michigan and North Carolina, the former with "Pollen about 85% imperfect," the latter with "Pollen about 90% imperfect." Furthermore, *R. frondosus* (p. 31), not treated as a hybrid, has seedlings which "show quite a range of variation as to shape of leaves, serration of leaflets, etc."

In the discussion on p. 11 the statement is made, that "Seeds from the selfed flowers of a number of suspected hybrids have been grown and these plants in the majority of cases show a reversion to the supposed parent types, which of itself, to our mind, is a positive proof of hybrid origin." No one will dissent from such a conclusion and it is therefore disappointing that the authors failed to tell us just which of the suspected hybrids gave these figures. They do report on 9 cases, the 3 above referred to in which seedlings "do not revert to the parent types" and 6 others in which they show variation. But the thesis would be more convincing if reports had been included for the remaining 37 reputed hybrids.

A serious doubt as to the finality of the conclusions in the paper must inevitably occur to those who have an intimate field-knowledge of the abundance in some of the upland districts of New Hampshire and Vermont of such thoroughly characteristic blackberries as *R. frondisentis* and *R. abbrevians*, shrubs with almost abnormally perfect pollen for a *Rubus*, with seedlings true to type and both with finely developed fruit, for although the plate before us (Plate xxviii) shows woe-begone and discouraged little fruits on *R. frondisentis*, the large and abundant colonies in the swamps of northern New Hampshire bear splendid plump berries (as shown by many sheets of specimens indentified by Dr. Brainerd). If these are to be treated respectively as "*R. pergratus* × *setosus*" and "*R. frondosus* × *setosus*," while *R. elegantulus* and *R. vermontanus*, of closely similar range and with amazingly imperfect pollen, are good species, why do not the hybrids occur generally throughout the coincident ranges of their supposed parents? *R. pergratus* is an abundant and much prized blackberry in many regions from Prince Edward Island to Cape Cod, Connecticut and Minnesota and *R. setosus* abounds in most regions from Nova Scotia and New Brunswick to western New England and the uplands of Pennsylvania. Yet in more than a quarter-century of intensive field-study and collecting of blackberries in New England and eastern Canada the reviewer (who has collected in a single season as many as 4000 sheets of *Rubus* and may perhaps be counted something more than an "ordinary herbarium systematist," to quote Brainerd & Peitersen's phrase) had never seen *R. frondisentis* until he turned his attention for two summers to the blackberries of the White Mountain region. Similarly he had never before met *R. elegantulus*, *R. vermontanus* and *R. abbrevians*. But all four are dominant and very distinct shrubs of the White Mountain region, although the reputed parents of the latter, *R. frondosus* and *R. setosus*, like the supposed parents of *R. frondisentis*, have much wider ranges. Brainerd & Peitersen assign *R. frondosus* to "Open fields and hillsides in southern New England. The form *R. recurvans* . . . . . . north into Maine, New Hampshire and Vermont," but they include in *R. frondosus* not only *R. recurvans* but also *R. philadelphicus*. The comprehensive species would thus have a range from Nova Scotia at least to western New England and Virginia, while reputed hybrids of it are cited from as far west as Illinois. The range of *R. setosus*, the other supposed parent of *R. abbrevians*, has been stated above. If, then, *R. abbrevians* and *R. frondisentis*, with nearly perfect pollen, with full and handsome berries, with seedlings true to type and with ranges coincident with those of the unquestioned species, *R. elegantulus* and *R. vermontanus*, both of which have distressingly imperfect pollen,—if the constant *R. abbrevians* and *R. frondisentis* are modern hybrids of widely dispersed parents, why have they not been found somewhere else in the vast area where their parent species abound and where thousands of collections of *Rubus* have been made?

The reviewer is not arguing that wild hybrids do not occur in *Rubus*, for he believes that they do. His own experience as well as some of the data given by Brainerd & Peitersen seem conclusive on that point. He is simply emphasizing that in such instances as those just discussed the paper fails to make a convincing case. In another paper which is announced perhaps the authors may do so.

The reviewer is also puzzled, as others must be, to know why that most definite of coastal plain shrubs, *R. cuneifolius*, ranging all the way from Alabama and Florida to Connecticut and distinguished even by the novice on characters not found in any other northeastern species, is recognized only by its inclusion in a list of "Additional Forms of Doubtful Status" (p. 83). If, by chance, the authors have doubt as to the proper name for this shrub, there can be no question whatever about the shrub itself. Other points which may well puzzle or surprise those who have learned to expect care in Dr. Brainerd's work are the statement about the altitudinal range of blackberries, the item regarding the publication of *R. sativus*, and the omission from the citations of literature at the end of the paper of every one of Blanchard's 22 papers, including his highly important and authoritative epitome already referred to, one of the most significant if not, indeed, the most valuable series of critical notes we have upon our native blackberries, their ranges and constancy.

Those who are familiar with our alpine districts would be amazed to see any of the blackberries far above timber-line, yet Brainerd & Peitersen tell us, that "The blackberries of New England are distributed from the highest mountain peaks to the lowest valleys" (p. 14). Nevertheless, the reviewer, who with Professor Arthur Stanley Pease has taken pains to trace the altitudinal limits of blackberries on "the highest mountain peaks," is confident that few if any true blackberries are known in New England from far above 3500 feet, the upper limit in the forests of Mt. Washington of our most northern species, *R. canadensis*. To be sure, *R. Chamaemorus*, the only member of a unique subgenus which is often considered a monotypic genus, occurs on the highest mountain peaks of New England, but it surely is not a blackberry, although this ancient, circumpolar monotype has quite as poor pollen as do many other monotypes and most of the supposed hybrid blackberries.

In February, 1900, Dr. Brainerd published in Rhodora the following paragraph:

"**Rubus sativus.** This is *Rubus nigrobaccus,* var. *sativus,* Bailey, which we are confident should be regarded as a distinct species. As we find it in western Vermont it is farther removed from *R. nigrobaccus* than any of the four forms last mentioned . . . . The name chosen by Professor Bailey is most appropriate, as the species is the parent of some of our best garden varieties."[1]

In December of the same year he recognized it as "**R sativus,** Brainerd. (R. nigrobaccus, Bailey, var. sativus, Bailey). In dry alluvial soil; Weybridge, *Brainerd;* West Rutland, *Eggleston.*"[2] But in April, 1914, Dr. Brainerd said: "the Vermont plant identified as 'a small form of *R. nigrobaccus* var. *sativus*' by Prof. Bailey (see Rhodora **2**: 24, Feb., 1900 [i. e., p. 26, where he forgot to state that Bailey had so determined it]), and described as *R. sativus* in the Gray Manual, and as *R. Brainerdii* by Dr. Rydberg . . . is hardly more than a dwarf form of *R. pergratus* Blanchard."[3] Only one year later, in April, 1915, in the Vermont Botanical Club's *Flora of Vermont* (the introduction signed: Ezra Brainerd) the Weybridge shrub was listed (p. 215) without even a question as a perfectly valid species, "**R. Brainerdi** Rydb. (R. sativus Gray's Man,. ed. 7)." But in the paper now before us the little Weybridge shrub, this time conceded to be neither *R. pergratus* nor a valid species, but merely an uncharacteristic and underdeveloped form of *R. frondosus* Bigelow, is given a full-page plate and a special page (33) of discussion as *R. Brainerdi* Rydberg (1913).

The authors state that "*R. brainerdi* Rydb. is a marked illustration of the confusion which has existed in the taxonomic literature," but it is obvious that the *confusion* is not wholly restricted to the literature. And, although the Weybridge shrub was one year "a distinct species," *R. sativus,* another year "a dwarf form of *R. pergratus,*" still later a valid species, *R. Brainerdi,* and at last report "a form of *R. frondosus,*" it is amazing that at no time has the wayward plant been accused of being a hybrid!

Since the name *R. sativus* Brainerd, which, when published in February, 1900, was a "name . . . . most appropriate," has now become objectionable, the following explanation is given: "Brainerd in a discussion of the plant to which Bailey had applied this varietal name [*sativus*] is accredited with the elevation of this variety to specific rank through a too liberal revision of his manuscript by the editors of Rhodora" (p. 33).[4]

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[1] Brainerd, Rhodora, ii. 26, 27 (1900).

[2] Brainerd, Jones & Eggleston, Flora of Vermont, 53 (1900).

[3] Brainerd, Vt. Bot. Cl. Bull. no. 9, 15 (April, 1914).

[4] The actual passage reads somewhat strangely: "But based upon no definite type, Brainerd in a discussion," etc.

Such an unpleasant accusation, if based upon fact, would be serious but Dr. Brainerd has certainly forgotten that, less than two months before the publication of *R. sativus*, in a letter dated "Middlebury, Vt., Dec. 16, 1899" and written and signed by himself, he wrote the editors of RHODORA:

"If I get my article in by Jan. 1, will you publish it in Feb. Rhodora? ——— is preparing a 'monograph' of the genus. I should like to propose *R. sativus* as a species before he does, as I suspect he will."

Comment is unnecessary.

The plate (X) of *Rubus argutus* shows an inflorescence with no foliaceous bracts and there is no mention of such in the description opposite. Yet on p. 55 we are told that *R. Jeckylanus* is a hybrid which "Resembles *R. argutus* in having leafy-bracted inflorescence." This was presumably a misprint for *R. frondosus;* at least misprints are frequent in the publication. For instance, *R. glandicaulis* (p. 61) is treated as a hybrid of *R. allegheniensis* and *R. setosus* because it "Resembles *R. pergratus* in having pubescent leaves," etc.; *R. frondisentis* (p. 63) is called a hybrid of *R. pergratus* and *R. setosus* because it "Resembles *R. allegheniensis* in having pubescent leaves," etc. Two of these confusions have been corrected in manuscript in some of the copies issued; but the very fact that they passed unchanged through the final proof suggests indecision as to the parentage of the "hybrids." It would be quite unlikely that these inconsistencies would be due to mischievousness of the compositor or to "a too liberal revision of . . . manuscript by the editors" of the Experiment Station bulletins.

But despite the many points in which a difference of interpretation is inevitable and the unconvincing nature of much of the data presented, students of the perplexing genus *Rubus* will find much to commend in the paper. Of great importance, of course, are the records of apparently defective pollen (there is no statement of actual germination-tests) and constancy of seedlings; and everyone who uses the paper will regret that there are so few of the latter records for the 46 reputed hybrids. Finally, special praise should be given the illustrations of species, 31 exquisite full-page drawings, obviously by Schuyler Mathews. These drawings add tremendously to the value of the publication.

CREPIS SETOSA IN OREGON.—Mr. Long's interesting study of the occurrence of *Crepis biennis* (in RHODORA **21**: 209 ff.) calls forcibly to mind my own experience with the introduced species of this genus in Western Oregon. When I began to study the flora of the Willamette Valley in 1915, it soon became evident that *C. capillaris* deserved a place among our most abundant weeds, occurring everywhere in fields and waste places. Along with it, however, I soon began to notice a coarser, more bristly plant of the same genus, which I at first took for the native *C. barbigera* Leiberg. But this species, a lower and stouter plant, seems to be confined to the sage-brush plains of Eastern Oregon, while our plant had every appearance of being an immigrant. During the first season I saw but a few specimens; but each year has added to the number, until it is now almost as frequent as *C. capillaris,* with which it is associated in great abundance in waste places, fields, roadsides and river-banks throughout the entire region adjacent to Salem. Professor C. V. Piper, to whom I pointed it out in 1918, informed me that it was *C. setosa* Haller f., a native of that apparent paradise of weeds, the Mediterranean region, and that I would not be able to find a description of it in any American work. The fact that it has not found mention in any Western manual shows that it must be of comparatively recent introduction and restricted range; but a stranger in Western Oregon would infallibly conclude that it deserved to be enrolled among our most thoroughly established weeds. It would be interesting to know to what extent it has been observed by Eastern collectors. As far as *C. biennis* is concerned, my experience here has been identical with Mr. Long's. I have never seen the plant, or anything like it. Macoun's material from Vancouver Island is probably the basis for Henry's inclusion of the species in his recent Flora of Southern British Columbia, 329 (1915); but Mr. Long has shown Macoun's plant to be *C. nicaeensis,* and the existence of true *C. biennis* in the Northwest seems still to lack confirmation. Apparently no native species of the genus have found their way into the Willamette Valley, although *C. occidentalis* Nutt. and *C. monticola* Cov. both occur in the southwestern portion of the State.—J. C. Nelson, Salem, Oregon.

A Further Note on Crepis biennis.—In a recent article on the American occurrence of *Crepis biennis*[1] it was shown that most of the records for the species were based upon misidentifications, and that only three authentic specimens were found in the large collections of the Gray Herbarium, the New York Botanical Garden, the National Herbarium, the Missouri Botanical Garden, and the Philadelphia Academy. The only data on the occurrence and persistence of the species at these stations consisted of the notation, "a casual" on one label. It was indicated, however, that the plant is probably not of a vigorously weedy nature and never became established in America—appearing to be distinctly a waif and not worthy of its general recognition in American manuals.

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[1] Long, Rhodora, xxi. 209 (1919).

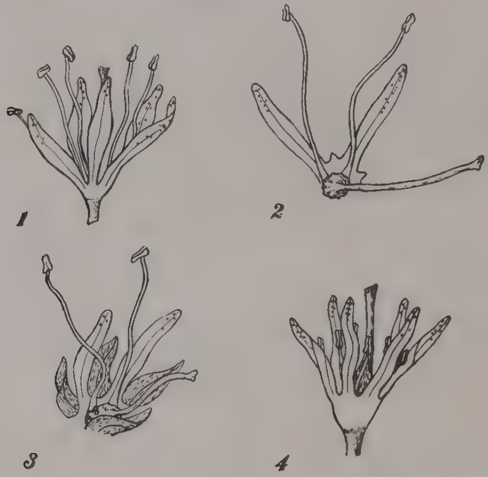
It is gratifying to be able to add a bit of definite evidence upon an occurrence of the species recently brought to light in the herbarium of Dr. H. B. Meredith. For many years Dr. Meredith was head of the State Hospital at Danville, Pennsylvania. His hobby has long been botany, and although probably enjoying most the collecting of the less familiar plants of more remote regions, he found a very fertile and fascinating field for observation and collection, during leisure moments, in the extensive lawns about the hospital. Here there appeared from time to time, after the seeding of the lawn, weeds of numerous kinds, some of more than usual interest. In this habitat *Ajuga genevensis,* for example, has become established. Most of the species noted, however, followed the more usual course of strange weeds in lawn-grass and failed to appear the second season, or at best lasted but a year or two.

On learning of my interest in these weeds, Dr. Meredith sorted out from his collection a number of them for my examination, and under "Sonchus arvensis" we found a good specimen of *Crepis biennis.* The label data reads: "State Hospital lawn, Danville, Penna., June 6, 1889. Probably from imported grass-seed." Dr. Meredith distinctly recalls the plant and assures me that it did not appear on the lawn a second year.

Through the generosity of the collector the specimen has been deposited in the Herbarium of the Philadelphia Academy.—BAYARD LONG, Academy of Natural Sciences of Philadelphia.

THE SUPPOSED GENERIC CHARACTER OF NAUMBURGIA.—Some botanists maintain *Lysimachia thyrsiflora* as a genus *Naumburgia,* distinguishing it from *Lysimachia* by the small, tooth-like staminodia in the sinuses of the corolla. On one of the specimens of *Lysimachia thyrsiflora* in the Gray Herbarium, however, is a note by the collector —"teeth in sinuses of corolla abortive."

At the suggestion of Professor M. L. Fernald, a number of dissections were made from both American and foreign material. It was found that the American specimens were consistently characterized by an absence of the staminodia. These were often wanting in the Eurasian, also, being the exception rather than the rule. The accompanying sketches illustrate these results. Thus *Naumburgia* Moench, as a genus distinct from *Lysimachia,* falls to the ground. The plant with teeth is probably a variation.



Lysimachia thyrsiflora, ×2⅔: 1, from Japan; 2, from Sweden; 3, from Nova Scotia; 4, from Indiana.

Since specimens for examination were chosen all the way from Maine to Oregon in the United States, and from various locations in Switzerland, Bavaria, Saxony, Scandanavia, and Japan abroad, it is reasonably certain that the data were broad enough to justify this conclusion.

In the seventh edition of Gray's Manual the plant is described as having its corolla "very deeply 5 (or 6–7)-parted." As many as nine and as few as four divisions, however, have been found.—MARION E. ALLEN, Radcliffe College, Cambridge, Massachusetts.

DOES SAXIMONTANUS MEAN "ROCKY MOUNTAIN?"—In his article on "The American Varieties of *Pyrola chlorantha*" (RHODORA **22**: 49-53), Prof. Fernald has revived the word "*saximontana*" to designate one of these varieties, evidently intending thereby to emphasize the fact that the new form occurs in the Rocky Mountain region. This word seems to have gained an undisputed place in botanical nomenclature, dating back to Haussknecht's *Epilobium saximontanum*

(Oesterr. Bot. Zeitschr. **29**: 119. 1879). Since then we have had *Aquilegia saximontana* Rydb. (1895), *Potentilla saximontana* Rydb. (1896), *Salix saximontana* Rydb. (1899), *Saxifraga saximontana* E. Nels. (1899), *Draba saximontana* A. Nels. (1900), *Ribes saximontanum* E. Nels. (1900) and *Juncus saximontanus* A. Nels. (1902).

If these authors intended by the use of this specific adjective to convey the meaning that the plant was restricted to that part of the Rocky Mountain system lying north of the Laramie Plains, and called by Lewis and Clark the "Stony Mountains," in contradistinction to the Park Mountains lying to the southward in Colorado, New Mexico and eastern Utah, the word seems very well chosen: but if it was selected as the Latin equivalent of Rocky Mountains in general, it lacks the significance which it would have for one who knew no other language than Latin—unless indeed we are to assume that the Rocky Mountains are so called from the frequency of loose stone on their slopes!

But the universal belief in the West is that the name "Rocky" alludes to the predominance of bold cliffs and pinnacles of bare treeless rock, which might be described either as *rupes* or *scopuli*, but hardly as *saxa*, the latter word being only the prosaic designation for the material *stone*, thought of usually as occurring in detached fragments.

That this was the view of DeCandolle, a writer of correct and idiomatic scientific Latin, seems to be borne out by numerous passages in the Prodromus, e. g., under *Pentstemon secundiflorus* Benth.: "In montibus Scopulosis" (**10**: 325). To be sure, *scopulus* in the classics more frequently refers to rocks or ledges *in the sea*; but this is not uniformly the case (cf. the account of the cavern of Cacus in the Eighth Book of the Aeneid), and the fact of the bold and projecting character of the rock seems to be the root-idea.

But *saximontanus* has come into such general usage that it may now be regarded as a sort of *nomen conservandum;* there is no doubt that *we* know what it means, and it is hardly pertinent to inquire whether to a Roman it would have conveyed the same idea. Since scientific Latin has degenerated into a sort of conventional symbol, and seems no longer subject to the rules which govern the usage of a living language, priority and universality rather than idiomatic correctness will continue to be the chief desiderata, although an ineffectual squeak of protest may now and then be emitted by the few surviving classicists!—James C. Nelson, Salem, Oregon.

Vol. 22, no. 263, including pages 169 to 184, was issued 14 January, 1921.

ERRATA.

Additional for vol. 21:
Page 178, line 16, *for* n. comb. *read* Nieuwl. Am. Midl. Nat. ii. 278. 1912.
“ 210, “ 8, for *capillacea* read *capillaris.*
“ 212, “ 23, for *capillacea* read *capillaris.*
“ 220, “ 9, for **americana** (Fisch.) read **intermedia** (Muhl.).
“ 220, “ 9, for AMERICANA read INTERMEDIA.
“ 220, “ 10, *for* (Fisch.) *read* (Muhl.).

Vol 22:
Page 11, line 18, *for* 266 *read* 866.
“ 51, “ 23, for *clorantha* read *chlorantha.*
“ 126, “ 30, for **C**. read **V**.
“ 126, “ 33, for **C**. read. **V**.
“ 135, “ 34, *after* L. *insert* a comma.
“ 136, “ 12, *for* Robinsii *read* Robbinsii.
“ 137, “ 41, *for* Robinsii *read* Robbinsii.
“ 156, “ 37 *for* 259 *read* 260.
“ 172, “ 25, *for* d. c. villosum *read* d. C. villosum.
“ 183, “ 4, for *siccatum* read *siccanum.*

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